

Title (en)
System for laser beam expansion without expanding spatial coherence

Title (de)
System zur Laserstrahlausdehnung ohne Ausdehnung der räumlichen Kohärenz

Title (fr)
Système pour l'expansion de faisceau laser sans étendre la cohérence spatiale

Publication
EP 1992991 A2 20081119 (EN)

Application
EP 08015487 A 20030730

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Abstract (en)
A system (100), comprising: a mirror (200); and first (204) and second (206) spatially separated beam splitters positioned on a same side of and parallel to the mirror to expand light (102) emitted by a laser source into a plurality of beams (220,222,224) having light intensity substantially equal to each other without changing a spatial coherence of the light emitted by the laser, wherein a plane of the first beam splitter is located parallel to and a distance d from a plane extending from a reflecting surface of the mirror, wherein $d = a/(2 \cdot \sin \pm)$, a is a width of the light emitted by the laser source, and \pm is an illumination angle of the light with respect to the first beam splitter, wherein a plane of the second beam splitter is located parallel to and a distance $2d$ apart from the plane of the mirror, wherein an edge of the first beam splitter is laterally shifted a distance b with respect to a section of the mirror, wherein $b = d \cdot \tan \pm$, and wherein an edge of the second beam splitter is laterally shifted a distance $2b$ with respect to the section of the mirror.

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